

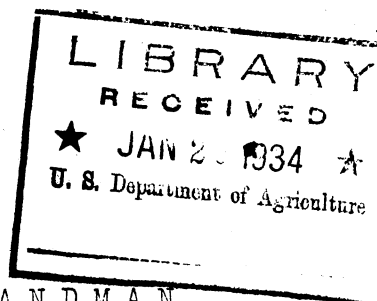
## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.

1.9  
An528

UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D. C.



THE EXTENSION ANIMAL HUSBANDMAN

Issued quarterly by the Bureau of Animal Industry  
and Extension Service, Cooperating,

C. D. Lowe, Senior Extension Animal Husbandman,  
K. F. Warner, Animal Husbandman in Meat Extension

Serial No. 32 --

December, 1933

Special Articles in this Issue:

Page

The Corn-Hog Adjustment Program, by Dr. A. G. Black .....	2
Current Activities in Michigan, by Delmer H. LaVoi .....	6
Basic Facts in Curing Meat, by K. F. Warner .....	9
A Beef Cattle Feeding Demonstration, by E. J. Maynard .....	12
The Minnesota Advanced Junior Sheep Project, by W. E. Morris.....	15
Paint Branding, by I. M. C. Anderson .....	17
Sheep Extension Work in Connecticut, by W. B. Young .....	19
Wyoming's Meat Project, by J. R. Neale .....	21

Also:

Outlook Film Strips Available .....	5
American Society of Animal Production .....	5
Southern Agricultural Workers .....	5
Maryland Changes Specialists.....	20
International Veterinary Congress .....	20
Adjustments in Livestock Extension .....	22
Recent Publications .....	23

## THE CORN-HOG ADJUSTMENT PROGRAM

By Dr. A. G. Black, Chief, Corn-Hog Section,  
Agricultural Adjustment Administration.

- - -

Every animal husbandry and agronomy extension worker has an interest in the Government's voluntary corn-hog production control plan now being offered farmers of the Middle West and other regions. In the first place, the plan will deal with two agricultural commodities with which extension men have been closely identified for many years. Secondly, it is the aim of the plan to raise the income of farmers and this means in part that farmers will be enabled to take up better farming practices, as advocated by extension workers. Finally the program is of interest because it is said that cutting down the total agricultural output will cancel the efforts put forth in the past to raise the efficiency of the individual producers.

Extension people are familiar with the general outline of the corn-hog plan. The plan is voluntary; no farmer will be forced to take part. Through the processing tax device of reserving for participating farmers a part of the market value of the total quantity of the product sold on the market, those who take part in the production adjustment are assured of the net benefits from adjustment. Stated briefly, the proposition is to reduce production sufficiently so that the market value (base price plus the benefit payments) per unit of commodity will approach or reach its pre-war relationship with the prices of things farmers buy. Those who do not take part will obtain only part of the market value of the product, that is, the base market price. The part represented by the processing tax goes to plan participants.

The major premise, of course, is that a smaller production of both corn and hogs will return a larger total income as well as higher prices to the farmer. At the same time, it is desirable that the adjustment on individual farms be proportionate with the past production of the farm. There must be some rather uniform basis for cutting down, until a well-developed land retirement policy is ready for execution. The day may come when large blocks of land will be taken entirely out of cultivation, but at present the most expedient thing is to diffuse the production adjustment in bits among the majority of farms. This, we are undertaking to cut the hog production on individual farms of this country by 25 percent and the corn production by 20 percent for the 1934 season. In so doing, we are aiming at higher farm prices, relative to prices of things farmers buy; larger farm incomes from a smaller production; more efficient use of farm labor with consequent higher real income, and better use of land and livestock.

Anyone acquainted with foreign and domestic agricultural statistics realizes the magnitude of a corn and hog production adjustment program in the United States. There are 4,500,000 farmers who grow the two crops. Production of corn and hogs is a major enterprise on at least 1,500,000 farms spread over a wide territory. The producers are a highly individualistic, intelligent type, accustomed to watching the market places for the purpose of guessing the best day to sell rather than answering the broader question as to how well the current production is adjusted to demand.

The primary appeal of the corn-hog plan will be the benefit payment. The plan will seem important mostly because it is a device for obtaining a larger farm income. But it is very important that producers also understand the real basis for such adjustment. We must understand that an adjustment in the total farm output is not a step backward, but rather a long step forward toward a sound agricultural system. This educational phase of the corn-hog campaign has peculiar significance for extension workers because it is sometimes charged that the surplus production today largely is due to the efforts to teach farmers "how to grow two blades of grass where one grew before."

In the past there has been some over-emphasis on the matter of raising individual farm output and not enough concern about the consequences of an increased total output, which inevitably results when individuals get higher yields from a given number units of production. Perhaps the excess production problem which plagues us today would not be so acute if efficient farming methods had not been developed so rapidly. Perhaps, too, we would need another half million farmers to turn out the present output.

But these suppositions are not sound indictments of individual efficiency in farm operation. Rather the proper conclusion is that efficiency has not been carried far enough. We have encouraged the use of more efficient methods and materials among individual farmers. We have enabled some individuals to excel their neighbors in production volume for a given labor investment; this has operated to give the efficient ones a larger proportion of the total expenditure made by ultimate consumers for the commodity. But unless there is constantly widening demand for the crop, this upward surge of efficiency among many individuals results in an excess production. Producers invariably increase the output rather than reduce the hours of labor. This results in an excess production. It appears, therefore, that it is the excessive and uncoordinated application of efficiency by individuals primarily to increase the volume of farm output, rather than periodical adjustments in the output to keep balance with demand,

such as is now being contemplated under the Agricultural Adjustment Act, that tends to cancel out the advantages which otherwise might be realized through better practices taught by animal husbandmen. We have yet seriously to apply the latter kind of worthwhile efficiency; maintaining proper adjustment of total output.

The trend of the hog business during the past few years is a demonstration of the waste which proper group efficiency might eliminate. For years, the United States hog farmer had been a merchant with two markets; the home market and the outlet abroad. During the World War, our foreign market shot to unprecedented heights. After the war, however, the European demand gradually subsided, mostly because of the rapid restoration of hog production in Germany and other continental countries. But the United States hog production remained at war-time levels. Last spring there was a 3 percent increase in the pig farrow; up until the emergency hog marketing program was put into effect last August, there was prospect for a large increase in the fall farrow. Aided to some extent perhaps by efficient methods, clearly we were raising an excess of several million head of hogs.

The relatively low hog prices are a reflection of this situation. In 1932, it took 23 hogs to equal the purchasing power of 10 hogs in the pre-war period. The prices of things farmers buy were comparable for the two periods. All prices fell during the depression, but hog prices dropped below the lower general level on account of the lack of balance between supply and demand. We can only guess as to how much larger farmers' income from hogs would have been over the past decade had hog production kept step with changes in demand.

In corn production, too, we have the picture of incomplete efficiency. The advantages obtained from individual excellence in corn culture has been partially offset by lack of balance between the supply of corn and demand for the grain or products derived from it. The increasing number of hogs after the war absorbed the corn released through the decrease of 11 million head of horses and mules, thus obscuring for a time the real problem of corn production adjustment. But now it is plain that a reduction in hogs is necessary and this adjustment begs a simultaneous and at least proportionate reduction in corn.

Unless this is done, the quantity of corn released by hog production adjustment will tend to depress the price of corn and encourage heavier livestock feeding, even though it is generally acknowledged that a net reduction in livestock numbers is desirable under present conditions.

We want to continue in our efforts to raise the efficiency of our people. As we reduce the labor and material requirements for the agricultural output, the labor of a higher percentage of our population becomes available for production of other goods and services for all the people. But we must not overlook the very important task of coordinating individual efforts in a scheme of planned total production. It is important that we demonstrate to producers the desirability both of output adjustment and reduction of the direct and indirect labor investment per unit of production whenever possible. In the agricultural production program of the future, extension workers can continue to fill an essential role, but it is also important from the long-time viewpoint that they be supplemented in their work by others who help farmers as a group to keep the total agricultural output within reasonable bounds--to adjust agricultural production to effective demand.

-----oOo-----

#### OUTLOOK FILM STRIPS AVAILABLE

The Bureau of Agricultural Economics has placed on film strips the following series of charts. These film strips are now available for purchase from Dewey & Dewey, 5716 35th Avenue, Kenosha, Wis., the firm that holds the Department contract for the production of film strips.

302 Sheep, Lamb and Wool Outlook Charts-1933 (48 frames) 28¢  
303 Demand Outlook Charts-1933 (48 frames) 28¢  
310 Hog Outlook Charts-1933 (44 frames) 28¢

-----oOo-----

#### AMERICAN SOCIETY OF ANIMAL PRODUCTION

The extension section of the American Society of Animal Production, at the recent Chicago meeting, elected the following officers for the ensuing year - Chairman, B. F. Creech of West Virginia; Vice Chairman, D. H. LaVoi of Michigan; Secretary, P. T. Brown of Indiana.

-----oOo-----

#### SOUTHERN AGRICULTURAL WORKERS

The annual meeting of the Association of Southern Agricultural Workers will be held at Memphis, Tenn., January 31 to February 2, 1934. Dr. A. L. Shealy of Florida who is secretary of the animal husbandry section is preparing an attractive program. All southern workers are invited to attend.

-----oOo-----

## CURRENT ACTIVITIES IN MICHIGAN

By Delmer H. LaVoi,  
Extension Specialist in Animal Husbandry.

- - -

We have found that one of our best means of using livestock extension projects in an educational way is at the time of our Farmers' Week which is held each year the fore part of February.

Through the cooperation of the State Board of Agriculture, college officials, State Department of Agriculture and the Michigan Live Stock Improvement Association, it has been possible to conduct an annual livestock show as a part of the Farmers' Week program. All animals entered in this show have been winners in the various livestock extension projects conducted during the previous year. Small cash awards are provided through cooperation of the various breed associations and the State Department of Agriculture.

A display of the winning animals in these various projects throughout the week serves as a demonstration of what can be done by following recommended practices. All entries had to fulfill certain requirements in order to be eligible for the show; therefore, we feel that an exhibit of this kind has considerable educational value for the exhibitor as well as for those who attend the show.

The animals on display represent most all sections of the State and this creates a local interest in these shows. It helps to bring in more people who in turn are benefitted by other parts of the program that are conducted throughout the week. In 1933 20,000 people were in attendance at Farmers' Week. Interesting evening programs of general interest are also held during the week in addition to the many sectional meetings devoted to different phases of agriculture. The State livestock breed associations also hold their meetings at this time and the officers of these associations report an increased interest and a growing membership partly as a result of these shows.

All the animals on exhibition are judged and the market animals are sold at auction at the close of the week. Packers and other buyers throughout the State have given these sales good support.

Close to 175 animals made up the show last year which was

composed of 40 colts, winners in the colt-development project; 35 beef calves, winners in the beef-calf feeding project; 60 lambs, consisting of pens of 3 ewe lambs, winners in the Wolverine lamb-production project, and 30 barrows, winners in the pig-feeding project. A definite performance record is set for each project and in order to be eligible to show, this requirement must be fulfilled. For example, calves entered in the beef-calf feeding project must make an average daily gain of at least 2 pounds during the 210 days feeding period in order to be eligible to show.

Placards are posted above each animal or pen of animals on exhibit showing the rations fed and the management practices followed. Many people make use of this information. The animals are also used in the different demonstrations conducted during the week. The judging of these animals attracts large crowds and it is another way of showing desirable market types and their correlation with growth and rate of gain. Last year the reserve champion steer of the show was also the highest in rate of gain, having made 2.8 pounds average daily gain for the 210-day feeding period.

By having these shows in February, it also helps to stimulate enrollments for the coming year. At present between 450 and 500 livestock men in the State are enrolled in these various projects. They are interested in this work and are doing their best to fulfill the requirements which will make them eligible for the annual shows. We feel that this event lends considerable stimulation to livestock extension work, besides being of considerable educational value in itself.

#### Ram Truck Project Has Successful Year

More than usual interest was shown in purebred rams this past fall. Even though money was scarce, more sheepmen were interested in improving their flocks through the use of good purebred rams than has been the case during the past three years. This was shown by the fact that the ram truck operated by the Michigan Purebred Sheep Breeders' Association in cooperation with the animal husbandry extension department, Michigan State College, had its best year from the standpoint of number of rams placed. The general average of prices received was also a little higher than a year ago. A total of 186 rams were placed through this effort, 36 of which were exchanges. Most of the rams handled were yearlings and were consigned by 54 different breeders of the State.

County ram exchange days were held in connection with a number of the stops made by the truck of which there were 38 in all.



At these stops, in addition to the rams sold off the truck, breeders and other sheepmen were invited to bring in the rams which they had for sale or exchange. Seventy-five rams were placed for individuals making use of this service.

At each of the stops educational demonstrations, such as judging, ram selection and breed characteristics, were conducted. Rams carried on the truck were made use of in these demonstrations. Discussions were also given on recommended fall flock improvement practices in addition to other timely subjects. Over 1,500 people attended these demonstrations.

As in the past rams were delivered on order. Through the summer sheepmen from various parts of the State sent in orders requesting that rams be selected to fill their particular needs. Nearly 90 rams were delivered at the meetings on such orders. This shows that Michigan sheepmen are attaching a great deal of importance to the careful selection of their rams.

Since the ram truck project was started seven years ago, over 325 rams have been distributed to sheepmen throughout the State. These good rams have been a factor in the improvement of the quality of Michigan's sheep and lambs. This can be readily seen at terminal markets where Michigan lambs at present are showing more uniformity and higher quality than they have in the past.

The county agricultural agents throughout the State are giving valuable assistance to the sheepmen through definite sheep improvement programs. One of the important phases in these programs is the use of purebred rams. They also cooperate in this project by arranging the meetings. News articles and posters pertaining to the program are furnished them from our office.

The counties which led in the number of rams placed from the truck this fall were: Alcona, with 15 head (this is the fourth year Alcona has led the list); Calhoun, 13, with 9 additional rams placed for local breeders; Tuscola, 12; Ogemaw, 11; Gladwin and Gratiot, 10 each; Alpena and Clare, 9 each. Six rams were also placed in Emmett County. This makes a total of 20 rams placed during the past three years in this county which has only 54 sheepmen in it.

-----oOo-----

## BASIC FACTS IN CURING MEAT

### A Summary of Field Experiences

W. J. Sheely of Florida has just sent in the recipe for a "high-powered" curing mixture advocated by one of his local ice plants, with a request that we check the magic alleged for it. This follows two recent trips in which an increasingly meat conscious farm populace is asking more and better questions about curing. The time seems ripe to record and classify the principles of meat curing as demonstrated by the practical experiences of us all. "Nothing is ever always" especially in the reports of farm meat cures, but there are some guide posts that we all can tie to. If my attempt to codify these experiences is incomplete or in error, I shall be glad to be informed.

#### Temperature Control

Curing is a race between the multiplication of spoilage bacteria in the curing pork and the penetration of the preserving (bacteria inhibiting) salt. It takes weeks for the salt to finally reach sufficient concentration to protect the center of hams and shoulders. Low temperatures are the best means known today to prevent the growth of spoilage organisms in meat until the salt has completed the task assigned it.

There appears to be some especial security that results from the prompt chilling of freshly slaughtered hogs. The carcasses should be chilled to below 40° F. within at least 48 hours after slaughter--20 to 24 hours is better--within 12 hours better still. The old superstition about cooling hot carcasses slowly for the first 24 hours has been disproved. If carcasses hang in temperatures below freezing they should be moved or protected when frost shows in feet and ears. Chilling hot hog carcasses in temperatures just below 40° F. or in coolers that drop below 40° F. within 10 to 12 hours after the last of the day's kill usually gives satisfactory results. Carcasses chill more rapidly in the open air than at the same temperatures in a small cooler.

The fat bellies and hams of hot unsplit, round-dressed hogs often overlap each other closing the body cavity to air circulation. Hot hogs, so hung, will frequently show spoilage the next day even when hung overnight in low temperatures. Slight taint is often observable along the belly when the hot heavy leaf fat is not removed. It is always wise to split hot hogs and pull the leaf fat as soon as the offal has been removed.

Whole or even half carcasses should be hung to chill so that

they do not touch. When hams touch each other chilling is often delayed disastrously. Few hot carcasses hung in temperatures above freezing will show an internal ham temperature below 40° the next morning. Cuts from such meat should be piled loosely during the second night to permit complete chilling. Prompt and thorough chilling of hot carcasses can not be overemphasized.

Packers cure meat at a temperature between 36° and 38° F. That appears to be the safest temperature to use. At the same time much meat is cured on the farm at temperatures above 40° and even up to 50°. Much meat is also lost at those higher levels. We do not know enough to be arbitrary about temperature in its relation to curing. We advise the 36° - 38° level, because it is safest rather than the only one that can be used. This fact should be made clear where ice-chilled boxes averaging 42° - 48° internal temperatures are built.

Temperature levels are believed to influence flavor as well as soundness. Uniform temperatures normally result in a uniform saltiness and flavor development from microbial and chemical action. Subfreezing temperatures retard curing.

Frozen meat can be safely cured but it should be defrosted at temperatures below 40° before being put in cure. There may be some elements of safety in this recommendation. It certainly makes for a more uniform and palatable cured product.

#### Curing Ingredients

Salt is used to cure or preserve meat; sugar to improve flavor and texture, nitrate to set the attractive red color in the meat.

Salt alone will cure meat. The amount necessary in dry cure can vary between 3 to 12 pounds or more per 100 pounds of meat; 8 pounds is usually recommended; 5 to 6 pounds will produce more mildly cured bacon and loins and will be sufficient for hams and shoulders if care is used to see that it is applied uniformly, pushed into hock ends, and not permitted to fall off the meat surfaces of the cuts.

Two pounds of sugar is probably more than is needed for 100 pounds of pork. This generous amount is suggested for the same reason that 8 pounds of salt is used. Three to four pounds of sugar is often used in curing bacon, beef and lamb. No excessive fermentation has been noticed and there appears to be nothing against the larger amount if the resultant flavor is preferred.

Two to four ounces of nitrate are used commercially for curing 100 pounds of meat. In larger amounts it is an undesirable addition to food products. Nitrate is an excellent preservative but it should not be used in quantities large enough to materially supplement the preserving action of the salt. Two ounces is usually enough for coloring purposes. Sodium nitrate is more effective, ounce for ounce than potassium nitrate. One and 68/100 ounces of the former will replace 2 ounces of potassium nitrate (salt peter).

The nitrites are too potent to be used under farm conditions.

The 8-2-2 curing mixture dissolved in  $4\frac{1}{2}$  gallons of water will make about a 75° brine suitable for hams and shoulders. The use of 5 gallons of water makes a milder 70° brine. Five and one-half to six gallons of water probably gives too weak a pickle for hams and shoulders. This 60 - 65° solution, however, is excellent for bacon, loins, spare ribs, and lamb.

#### Time in Cure

Two days per pound for the dry cure is the usual recommendation for hams and shoulders. Both Cobb of Louisiana and Snyder of Texas say this is not enough under their conditions and that three days are needed. At least 25 to 30 days are needed for all shoulders and hams even if they weigh only 6 to 10 pounds. Reduce amount of cure to suit the size of the cut but give the salt time to penetrate the bones.

Bacon and loins will dry-cure in a day to a day and a half per pound. Two to three weeks is a "shot gun" recommendation for such thinner cuts. Those who pull medium-weight bellies in seven or ten days will probably enjoy that milder cure. Four to seven days is sufficient curing time for well-trimmed spare ribs.

Four days per pound is standard time for brine curing hams and shoulders. Some pull at three days but four days is the usual recommendation.

Bacon and loins will pickle cure in about two to three weeks - even 12-to 16-pound bellies. A 65° pickle ( $5\frac{1}{2}$  gallons water) for three weeks is a general rule. The brine curing of loins and bellies should be tried out in the southern cold storage plants. For some farmers the extra quality would justify the extra trouble and space required.

Pumping concentrated brine into curing meat, poking salt into ~~hax~~ joints, removing the aitch bone, opening the stifle joints and the shoulder joint or boning and slicing entire cuts, are all variations of an effort to speed up the penetration of the salt. Where proper temperatures are available these methods are unnecessary. Where temperatures are too high these methods may or may not prevent spoilage. Don't bank on them too much.

Quality of product is always sacrificed by the use of these mechanical means to speed up salt penetration. The more the meat is cut open, the greater the proportion of oversalted, hard, moldy, unpalatable meat. -- K. F. Warner

-----oOo-----

#### A BEEF CATTLE FEEDING DEMONSTRATION

By E. J. Maynard,  
Utah Agricultural College.

---

Increasing gains on fattening cattle by 74 percent and at the same time decreasing the cost of those gains by 37 percent, steamed bone meal, a concentrated phosphorus supplement, substantiated Utah Experiment Station findings when used in the recent baby beef fattening demonstration conducted at Garland by the Utah-Idaho Sugar Company. In the final analysis 1,279 pounds of bone meal saved \$1,035.

Unmistakable evidence of a serious phosphorus deficiency in standard beet byproduct rations which have been used for the past thirty years by Utah farmers and livestock feeders led the Utah Agricultural Experiment Station to start remedial feeding studies during the winter of 1931-32. Forty head of range-bred feeder steers were fattened on a standard beet byproduct ration augmented by various supplements known to be rich in the essential mineral element, phosphorus. The striking results secured in this first experiment were duplicated in a second test conducted during the winter of 1932-33.

Blood analyses made on each individual of the entire 40 head of steers when they came from the range indicated an unmistakable phosphorus shortage where the supplements were not used.

Increased gains and decreased costs of production secured in two experimental feeding tests as a direct result from the use of phosphorus led to recommendations from the experiment station to the extension service for feeding demonstrations to give a graphic picture of the benefits in reach of farmers of the State. In the extension feeding demonstration conducted at Garland the outstanding results secured by the addition of 1/10 pound steamed bone meal per head daily to a wet pulp-molasses-alfalfa-salt ration fed the calves may be briefly summarized as follows:

It raised the average daily gain from 1.5 pounds per calf to 2.6 pounds per calf, and decreased the feed cost per hundredweight gain from \$2.42 per hundredweight to \$1.52 per hundredweight. It caused a noticeable improvement in appetite, raising the daily consumption of wet beet pump from 42 pounds to 69 pounds per head and it remedied an abnormal craving for salt, reducing the daily consumption from 0.32 pound per head to 0.07 pound per head.

Calves fed the small allowance of steamed bone meal with their ration made an average gain of 336 pounds per head in the same length of time (129 days) that calves not receiving this supplement gained 193 pounds.

Perhaps the clearest picture to be derived from the contrast presented by this significant comparison may be secured by considering figures on 100 head of calves finished in each of the two ways.

The group fed no supplement with the **beet** byproduct ration averaged a final weight of 651.3 pounds at a final cost of \$34.40 per head, and sold at the appraised price of \$4.75 per hundredweight returned only \$30.94 per head, or a loss of \$346 for the 100 head.

The group fed the phosphorous supplement in addition to the beet byproduct ration averaged a final weight of 790 pounds at a final cost of \$34.59 per head and sold at \$5.25 per hundredweight, returning \$41.48 per head, or a net profit of \$689 for the 100 head fed. In the final analysis the feeding of 1,279 pounds of steamed bone meal to 100 calves was responsible for a saving of \$1,035.

It is the role of the agricultural experiment station to solve fundamental agricultural problems and to present the solution of these problems in terms that may be applied to practical agricultural conditions in the State.

Table giving data follows.

# Utah Baby Beef Feeding Demonstration

Data are based on average calf in 4 pens of 25 calves each, fed 129 days -- April 13 to August 20, 1933

Item	Lot 1	Lot 2	Lot 3	Lot 4
	<u>Lbs.</u>	<u>Lbs.</u>	<u>Lbs.</u>	<u>Lbs.</u>
Daily Ration	U & I pellets* 2.8 Wet pulp 55.4 Molasses 2.5 Alfalfa 8.0 Salt .11	Wet pulp 41.5 Molasses 2.5 Alfalfa 8.7 Salt .32	Cotton-seed cake 1.6 Wet pulp 53.4 Molasses 2.5 Alfalfa 9.1 Salt .12	Bone meal 0.1 Wet pulp 69.3 Molasses 2.5 Alfalfa 8.7 Salt .07
Initial wt . . . . . lbs.	455.5	458.1	451.1	453.7
Final wt. (4% shrink) . . . . . "	767.5	651.3	757.8	790.0
Total gain . . . . . "	312.0	193.2	306.7	336.3
Daily gain . . . . . "	2.42	1.50	2.38	2.61
Feed required for 100 lbs. gain:				
Alfalfa hay . . . . . "	330.3	583.9	380.8	333.0
Wet beet pulp . . . . . "	2,289.7	2,770.2	2,245.8	2,659.5
Beet molasses . . . . . "	104.4	168.5	106.2	96.8
U & I pellets . . . . . "	115.6			
Cottonseed cake . . . . . "			68.6	
Steamed bone meal . . . . . "				3.8
Salt . . . . . "	4.4	21.1	5.2	2.9
**Feed cost per cwt. gain dollars	2.29	2.42	2.57	1.52
Cost per steer at start @ \$5.55 cwt. "	25.28	25.42	25.04	25.18
Feed cost per steer . . . . . "	7.14	4.68	7.88	5.11
Labor, vaccination and veterinary "	4.30	4.30	4.30	4.30
Total cost of fat calf . . . . . "	36.72	34.40	37.22	34.59
Price per cwt. needed to break even "	4.78	5.28	4.91	4.38

\*Compressed mixture of dried beet pulp, beet molasses, and steamed bone meal.

\*\*The values of the feeds used, per ton, were: Alfalfa hay, \$4.51; wet beet pulp, \$0.28; beet molasses, \$6.00; U & I pellets, \$15.00; cottonseed cake, \$30.00; steamed bone meal, \$42.00; salt, \$20.00.

## THE MINNESOTA ADVANCED JUNIOR SHEEP PROJECT

By W. E. Morris,  
Extension Animal Husbandman.

- - -

This project was organized to offer boys of advanced club age a somewhat larger enterprise than is provided in the single lamb project. A participant is required to own and manage a flock of ten breeding ewes. It has proved of real merit for older boys, as it offers them problems in breeding and management as well as feeding, and is of sufficient magnitude to enable them to secure a fair financial return for their efforts. It results in almost all cases in the development of a farm flock owned by the boy.

Our rules are few and they apply mostly to number of ewes and age of the lamb when weighed. The ten ewes may be grade or purebred, but the lambs must be sired by a purebred ram of medium wool breed. No restrictions are placed on feeding or management except that the lambs must be born between February 1 and June 1. A birth record is required on all lambs and the contest closes for them when the lambs average 135 days of age.

The project is conducted in contest form. The awards are made on the basis of average weight of lamb produced per ewe. Cash prizes are paid by the Minnesota Livestock Breeders Association, and medals are awarded by a farm paper to each boy who produces for the first time an average of 100 pounds or more of lamb from each ewe in his flock.

The method of making awards on the basis of lamb produced per ewe gives credit for (1) a high percentage lamb crop, and (2) high average weight for each lamb raised. This emphasizes proper management, so as to produce and raise many twins and encourage the finishing of the lambs at an early age.

Each member is advised on desirable feeding and management methods particularly during the breeding season, winter, and at lambing time. Rations are recommended, control methods for disease and parasites are outlined. The docking of all lambs and castrating of all ram lambs intended for market are required.

The results obtained by these young flock masters is surprising as will be seen by the following summary of the 1933 project. The average production for the top 15 members was about 140 pounds of lamb produced per ewe. This is nearly two market



lambs per ewe. This average is about 35 pounds higher than the best average on all flocks made any year in our adult contest. It is granted, of course, that the adult-owned flocks numbered many more ewes per flock. Likewise, the winning production for this year's junior project of 181 pounds of lamb per ewe is about 22 pounds larger than that made by any adult in our adult lamb production contest. Here again the adult flocks were larger.

It does show, however, that these junior shepherds follow management practices which result in a large lamb crop being born; that they save the lambs, control disease and parasites, and bring the lambs to market weight and condition at 4 1/2 months of age.

With a continuation of this project, many new flocks are being established in the hands of those who have learned how to make them a success.

#### Summary of 1933 Advanced Junior 10-Ewe Project

<u>Rank</u>	<u>Name</u>	<u>County</u>	<u>No. of lambs</u>	<u>Total</u>	<u>Av. wt.</u>	<u>Av. wt.</u>
				<u>wt.</u>	<u>of</u>	<u>of lambs</u>
				<u>Lbs.</u>	<u>lambs</u>	<u>per ewe</u>
					<u>Lbs.</u>	<u>Lbs.</u>
1	Cecil Fausch	Rice	21	1,813.2	86.3	181.3
2	Leo Jensen	Pennington	20	1,809.5	90.4	180.9
3	Gordon Clow	Kittson	20	1,608.0	80.4	160.8
4	Chas. Confer	W. Polk	18	1,547.2	85.9	154.7
5	Nettie Eklund	Stevens	17	1,440.0	84.7	144.0
6	Raymond Parnow	Pennington	20	1,429.0	71.4	142.9
7	Roger Ward	Kittson	17	1,400.8	82.4	140.0
8	Marvin Nelson	Pope	17	1,359.0	79.9	135.9
9	Lee Munger	Marshall	18	1,315.0	73.0	131.5
10	Arwin Lippert	E. Ottertail	16	1,266.0	79.1	126.6
11	Lois Padelford	Mower	21	1,240.2	59.0	124.0
12	Adolph Erpelding	Meeker	20	1,228.0	61.3	122.8
13	James Evenson	Houston	17	1,173.9	69.0	117.3
14	Alan Goodyear	Redwood	17	1,193.4	70.2	119.3
15	Kalvin Sylvester	Kittson	18	1,153.2	64.0	115.3

000

## PAINT BRANDING

By I. M. C. Anderson, Livestock Specialist,  
Montana State College.

- - - - -

The use of a red-hot iron for burning designs on the hides to signify ownership of western cattle and horses is a practice which has developed with the range livestock industry. Objections to this method are, damage to the hide for leather and the pain to the animal. A trade marked paint-like preparation recently put on the market gives promise of a change in the old method. It is claimed by the makers of this material that it will be more economical, more humane, and does not mar the hide.

Like any other new venture, this method of branding has received a lot of free advertising and some claims for it are grossly exaggerated. Some of the larger cow outfits in Montana have used the paint the past season with varying degrees of success. The writer does not recommend that it be universally used to replace the old fire irons for placing the identification marks on cattle and horses. However, this new method of branding has its place. During the past summer, there have been very few meetings of stockmen where someone did not ask for information in regard to the paint branding. Since the first trials of this paint at Montana State College on February 25, 1933, both cattle and horses have been branded with this material under almost all kinds of conditions. The paint is not fool proof and the results obtained depend largely on the skill of the operator and the design of the brand to be used. The temperature at the time of application of the paint is a very important factor in determining the results from the application of the paint. During the warm weather in the summer, there is very little trouble getting the paint to burn through the hair and make a permanent brand on the hide. During adverse weather conditions such as wet, cold, and windy days, it is rather hard to get a good brand on long hair. When the material is cold, too much of it may stick to the branding iron and too much paint will be applied, which will cause excess burning of the hide. No ill effects have come from this excess burning, but considerable time is required for the scar to completely heal. One animal so branded took sixty days for the scar to scab off. The fact that the animals suffer no pain while the paint is being applied, makes it easier to brand grown cattle. For this reason, the paint has a very important place for branding cattle that are going into the feed lot, or grown cattle that are changing hands.

One intending to use this material should have branding

irons made especially for its use. Avoid acute angles, and have the face of the iron at least one-fourth inch wide. The application should be made carefully to see that all points of the brand contact the hide. Long hair should be clipped. Avoid dripping paint on the animal or applying too much at one place.

One large operator in Montana found this paint very desirable in branding 100 head of saddle horses that he bought. The application of the paint was made when the hair was short and the horses seemed to suffer no ill effect from the branding.

The cattle that are being placed on feeding experiments at Bozeman have been individually branded with numbers five inches high and have a one-half inch face. The attendants have found this method very satisfactory in checking the numbers as the steers are individually weighed. If one individual happens to be off feed, it is very easy to read his number without penning him up or causing undue excitement in the lot.

The breeding herd at the Havre Station has been numbered with these same numerals. This will be very convenient next spring when the calves are dropping on the range as the rider will not have to take the cow to the corral to read her ear tag, neck chain, or tattoo number.

Stockmen have told the writer that they find the paint very convenient in branding bulls to be turned on the range. These are generally hauled in by truck and can be branded in the truck without having to go to headquarters to be placed in the squeeze for branding.

The claim of the makers of his paint that it does not injure the hide for leather making, is a point that has not yet been definitely determined. The one hide that has been tanned here was taken off thirty days after the application of the paint. All marks were not entirely healed when the hide was taken off. The unhealed places, of course, left holes in the hide when it was tanned. Places that were healed looked just the same on the under side of the hide as the old fire-iron brands.

-----oOo-----

## SHEEP EXTENSION WORK IN CONNECTICUT

By W. B. Young,  
Extension Animal Husbandman

- - -

Connecticut played a very important part in the founding of the sheep industry in the United States. Col. David Humphreys of Derby, Conn., who was the first importer of Merino sheep in 1802 and D. C. Collins of Hartford, who imported the first Rambouillet into the United States, were men of unusual foresight and appreciated the value of sheep husbandry. These two breeds of sheep soon became very popular in New England, particularly in Connecticut and Vermont. The first Southdown sheep were also imported into Connecticut and Rhode Island.

New England for many years was considered the outstanding section in sheep breeding and production. Hilly pastures as well as the valleys were and still are ideal for grazing sheep, and the Yankee farmers of the early days realized that sheep were peculiarly adapted to New England farm conditions.

Since those early days when sheep production flourished in New England, the number of sheep has declined gradually, partly because of increased specialization in perishable products. Therefore, knowledge of sheep husbandry and ardor for the enterprise diminished.

In more recent years, renewed interest has been shown in the promotion of sheep in New England. The topography and the amount of idle pastures available make New England especially adapted to sheep husbandry at the present time. Many specialized farms have not paid big returns recently and many farmers are again interested in diversification and utilization of everything on the farm. This puts the sheep enterprise again in the foreground.

In Connecticut our main extension work in animal husbandry is with sheep. This work is carried on by the extension animal husbandman, the county agents, the State sheep breeders' association and, in some cases, county sheep breeders' associations.

By a special State appropriation, part of the dog-tax revenue is used for promoting sheep husbandry.

We have two kinds of lamb-producing projects in our State, hot-house or early lambs, for which we have very satisfactory local as well as larger markets within a radius of one hundred miles, and the late summer lambs marketed during the fall. Fall lambs are sold mostly to butchers or dressed and wholesaled or retailed by the producer. Such markets have been satisfactory during the last few years in spite of low prices on central markets.

Because of the unusual opportunities for marketing lamb and wool the majority of our sheep producers have been able to pay expenses and derive a little profit, even during the past three years.

Sheep in Connecticut are valued higher per head than in any other State in the Union, \$4.30. This has been true for several years. The sheep breeders also have the advantage of being next door to Boston, the largest wool market in the United States.

Sheep thrive in New England if internal parasites are controlled and pastured rotated. Approximately 75 percent of our sheep producers use some control measures for internal parasites. Close to 50 percent are now rotating their sheep pastures and close to 90 percent of them dock and castrate their market lambs.

All in all, there are many advantages for sheep production in New England and the outlook is encouraging.

-----oOo-----

#### MARYLAND CHANGES SPECIALISTS

On November 1, Jos. M. Vial succeeded K. A. Clark as extension animal husbandman in Maryland. Mr. Clark resigned on September 15 to become manager of Monocacy Farms at Frederick, Md. For six years Mr. Vial was in animal husbandry extension work in Pennsylvania and for a time was connected with the Iowa Extension Service.

-----oOo-----

#### INTERNATIONAL VETERINARY CONGRESS

The twelfth International Veterinary Congress will be held at New York City, August 13-18, 1934. Dr. H. Preston Hoskins of 221 LaSalle St., Chicago, Ill., is general secretary of the Congress.

-----oOo-----

J. G. Liddell, who for several years has been the swine specialist in Georgia, has been transferred to full time resident teaching duties at the State Junior College of Agriculture at Tifton, Georgia.

-----oOo-----

### WYOMING'S MEAT PROJECT

Meat cutting and curing were introduced as an extension project in Wyoming on January 1, 1932.

The tremendous drop in the prices of all livestock--more particularly of sheep and hogs--stimulated the local consumption of home-grown meat. Many producers discovered that the homely arts of killing, cutting, and curing meats had been lost during the prosperous years just as their wives had forgotten the art of bread baking. A flood of requests, for information concerning meat, poured into the extension offices as a result of these conditions.

Our extension service met this initial demand with bulletins and circulars. Actual method demonstrations seemed badly needed, however. Since we have no meats man at the University of Wyoming, it was necessary that we provide some review and special training for our own county agents and specialists before proper demonstrations could be attempted.

To this end we requested the services of K. F. Warner of the Bureau of Animal Industry to assist us in holding a three-day meats school for extension agents at the time of the annual extension conference in January, 1932. Since both lambs and hogs were cheap, we secured enough so that every agent could work on a carcass. This school was a marked success in that it not only taught the participants new things about meat cutting and curing, but thoroughly sold most of them on the possibility of expanding their useful county programs through the addition of meats projects.

Many county agents started immediately to arrange community demonstrations in killing, cutting, and curing pork and lamb. Beef was temporarily omitted from the program. During the remainder of the winter season 30 meats demonstrations attended by 1,652 rural people, were given in 12 counties. Practically all these early demonstrations were given by the livestock specialist, as most agents were anxious to see the demonstration repeated in one or two of their communities before tackling the job themselves.

By the winter of 1932-33, many agents were responding to the urgent demands of rural women's clubs and other community organizations and giving the demonstrations themselves. During the past year the specialist has given 34 meat demonstrations, attended by some 2,200 rural people. No accurate account of the number of demonstrations given by agents the past season is available at this time, but it is notable that as many as 20 were given in one or two counties.

Requests are being received from several counties now for demonstrations in beef cutting and curing and for instructions in lamb and pork cutting at community schools.

To supplement these demonstrations and the U. S. Department of Agriculture bulletins, circulars have been prepared on the cutting and curing of pork, lamb and mutton, and beef. This meats project is reaching a lot of Wyoming people.

--J. R. Neale, Wyoming Extension Service.

#### ADJUSTMENTS IN LIVESTOCK EXTENSION

(Excerpts from a paper presented at the National Outlook Conference by H. P. Rusk, Head of the Animal Husbandry Department of the Illinois College of Agriculture.)

Animal husbandry extension specialists, like other extension specialists, all too often have taken a narrow view of the title "specialist." Some livestock extension workers have considered their little individual fields as something separate and apart from the general economic situation and from its influence on that situation. We must do a better job of relating livestock production to the rest of the agricultural program and to the general economic situation.

The present situation offers the best opportunity the extension worker has had to do an effective job in giving the producer a picture of the economic factors which influence the returns from his business, as well as information on sound methods of production. Certainly, extension workers who do not avail themselves of this opportunity will fail to do their full duty. It strikes me that it is the duty of every extension worker to familiarize himself with the phase of the A.A.A. program that affects his field, to study the economic philosophy back of it, and to relate it to his recommendations on production so that at least the more intelligent farmers can understand the part their operations play in the industry. A few well-chosen charts will be a great aid in presenting this phase of the work.

\* \* \* \* \*

The livestock extension man who is looking ahead will recognize that regardless of the immediate restrictions placed by the A.A.A. on utilization of land taken out of crop production, the stage is being set for areal pasture utilization problem to be dumped in his lap in the not very distant future. This problem will be solved more easily when it does come if he gives some attention now to the establishment of pastures best adapted to different areas. In this work he should seek the cooperation of the crop and soil specialists.

\* \* \* \* \*

The livestock specialists should be alert and make the most of the educational opportunities which impending developments afford. In my opinion the future of the Extension Service may depend more than most of us realize on its ability to adapt its program to this new order, always presenting known facts fairly and impartially; present the untried philosophy just as fairly and impartially and without personal bias; put every shoulder to the wheel when plans of procedure are determined upon; judge fairly of results, and help farmers and the general public to form correct interpretations of results.

-----oOo-----

#### RECENT PUBLICATIONS

##### Federal

"Comparison of Grain Rations for Beef Calves Before and After Weaning" by Black and Trowbridge - U.S.D.A. Technical Bulletin No. 397.

"Utilization and Cost of Power on Corn Belt Farms" by Reynoldson, Humphries, and others.- U.S.D.A. Technical Bulletin No. 384.

"The Agricultural Outlook for 1934" - U.S.D.A. Miscellaneous Publication No.182.

##### State

"Planning for Lamb Feeding" by H. R. Lascelles - Colorado Experiment Station Bulletin No. 405.

"Beef Production in Florida" by A. L. Shealy - Florida Experiment Station Bulletin No. 260.

"Feeding Lambs on Illinois Farms" by W. G. Kammlade - Illinois Experiment Station Circular No. 413.



"The Feeding of Mineral Supplements to Livestock" by  
H. H. Mitchell- Illinois Experiment Station Circular No. 411.

"Buying and Feeding Baby Beeves" by Rex Beresford -  
Iowa Extension Service Bulletin No. 188.

"Variations in Swine Prices Within Iowa" by Schultz and  
Black - Iowa Experiment Station Research Bulletin No. 161.

"A Well Planned Farm Business" by S. B. Cleland - Minnesota  
Extension Service Special Bulletin No. 155.

"4-H Sheep Club Manual" by I. M. C. Anderson - Montana  
Extension Service Bulletin No. 134.

"Beef Cattle" - Montana Extension Service Bulletin No. 136.

"Histological Differences in the Muscles of Full, Half, and  
Rough Fed Steers" by Robertson and Baker - Missouri Experiment  
Research Bulletin No. 200.

"Fattening Yearling Heifers on Alfalfa Pasture" by M. L.  
Baker - Nebraska Experiment Station Bulletin No. 281.

"The Assimilation of Calcium and Phosphorus from Deficient  
Mineral Compounds and their Effect on Range Cattle" by J. L.  
Lantow - New Mexico Experiment Station Bulletin No. 214.

"Sanitation as a Method of Controlling Stomach Worms in  
Lambs" by Hostetler and Foster - North Carolina Experiment Station  
Bulletin No. 287.

"Profitable Pork Production" by J. H. McLeod - Tennessee  
Extension Service Publication No. 147.

"4-H Pig Club Program," "4-H Beef Club Program," and  
"4-H Sheep Club Program" by Hector McDonald - Washington Extension  
Service Club Circulars No. 21, 22, and 23.

"Bang's Disease" by Wisnicky, Beach and Larson - Wisconsin  
Experiment Station Circular No. 260.

"Cattle Production on Wyoming's Mountain Valley Ranches"  
by Vass and Pearson - Wyoming Experiment Station Bulletin No. 197.

#### Commercial

"1934 Feeding Practices" by A. L. Ward - National Cotton -  
seed Products Association Bulletin No. 8, Dallas, Texas.